



**BLACK ROCK**  
MINING LIMITED

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# **MAHENG**

## **BEST IN CLASS GRAPHITE PROJECT**

**Paydirt Battery Minerals Conference - Perth**  
March 2019



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## COMPETENT PERSONS

The information in this report that relates to Exploration Results and Mineral Resource Statements is based on information compiled by John de Vries, who is a member of the AusIMM. He is an employee of Black Rock. John de Vries has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 and 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

The information that relates to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr Aidan Patel (Consultant with Patel Consulting Pty Ltd). Mr Barnes and Mr Patel are members of the Australian Institute of Mining and Metallurgy and have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Barnes, Mr Patel and Mr de Vries consent to the inclusion in this report of the matters based on their information in the form and context in which they appear.

The Ore Reserves have been compiled by Black Rock Mining, under the direction of Mr John de Vries, who is a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy. Mr de Vries is a full-time employee of Black Rock Mining and holds performance rights in the company as part of his total remuneration package. Mr de Vries has sufficient experience in Ore Reserve estimation relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves".



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# Who is Black Rock Mining?



**BLACK ROCK**  
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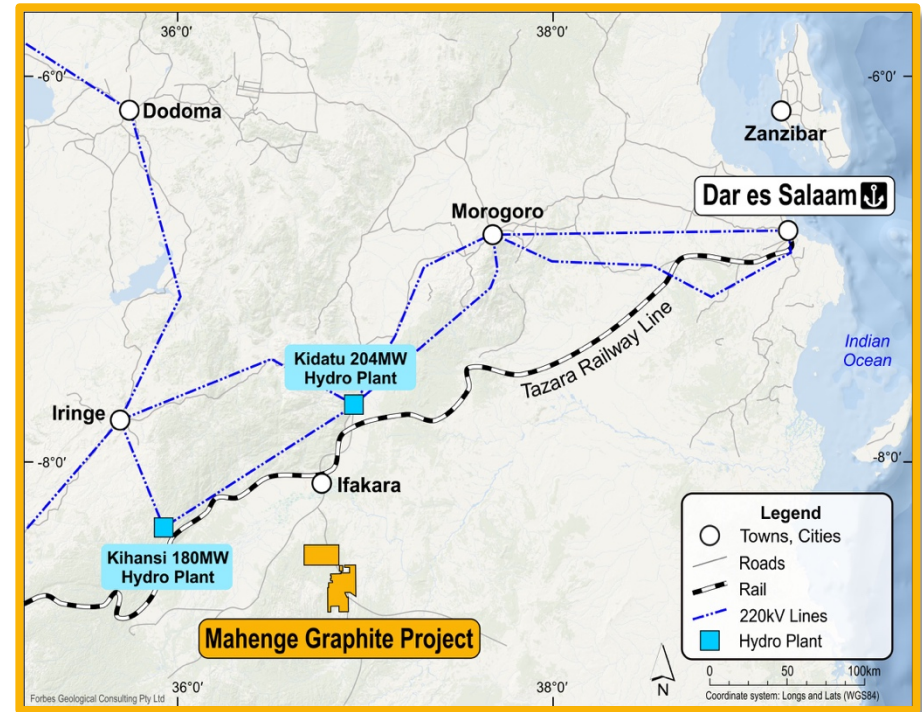
Black Rock Mining Limited is an Australian based company listed on the Australian Securities Exchange (ASX:BKT).

The Company has a 100% interest in the Mahenge Graphite Project located in Tanzania.

The Project has a JORC compliant Mineral Resource Estimate of 212m tonnes at 7.8% TGC.

The Reserve is 70m tonnes at 8.5% TGC and supports a mine life of 250k tonnes of graphite per annum for 25 years.

The contained graphite of the project is ranked #2 in terms of Ore Reserves and #4 in terms of Resources





**JOHN DE VRIES**  
CEO,  
Executive Director

Mining Engineer with over 35 years-experience in mine development and operations. Previously, General Manager Technical Services with St Barbara and integral in the 2014 turnaround. John has held positions at BHP Ni West, and was Global Business Manager, Advanced Mining Solutions with Orica Mining Services. John's geographic experience includes Africa, the Pacific, the FSU, North America and South America.



**RAYMOND HEKIMA**  
Vice President –  
Corporate (Tanzania)

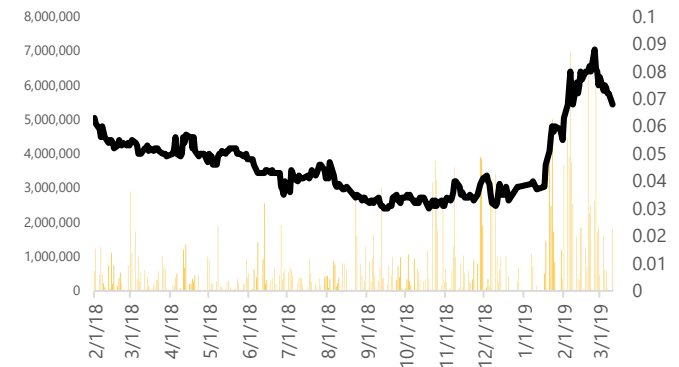
Holding qualifications in Environmental Sciences and Management with over 13 years experience with Government and Corporate sectors. Raymond is responsible for overall business and operations in Tanzania and manages relationships and interactions with, National Government, Local Government, NGO's and Community relations.



**RICHARD CROOKES**  
Non-Executive  
Chairman

A geologist with over 30 years executive experience in the resources and investments industries. Prior roles include Investment Director at Mining PE Fund EMR Capital, Executive Director in Macquarie Bank's Metals & Energy Capital Division and Chief Geologist then Mining Manager with Ernest Henry Mining. Has raised capital and financed a number of projects globally, including across Africa.

ASX Ticker	BKT
Share Price (as at 11 March 2019)	A\$0.068
Shares on Issue	538.5m
Options	47m
Fully Diluted Market Capitalisation	A\$33.4m
<b>Top 20 Shareholders</b>	c.42%



# Why Graphite?



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**Growing demand**



**Energy efficiency**



**EV & Batteries**



**Flake Size  
opportunity**



**Emerging Product  
Premium**



- Demand for energy storage and expanded applications is likely to double volumes over next decade
- In the expandable market, urbanization and building renovation are driving demand for large flake and purity products



# Why Black Rock Mining ?



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- The best undeveloped graphite project globally driven by geology and geography
  - Highest grade concentrate and flake size distribution with a scalable deposit as demand grows
  - Lowest peak capital expenditure driven by good logistics – close to rail and port with direct grid power access
- 
- **The only project with a bankable DFS**



**Geology**



**Geography**



**Grade & Size**



**Exceptional  
Economics**



**Logistics**

# Exceptional DFS

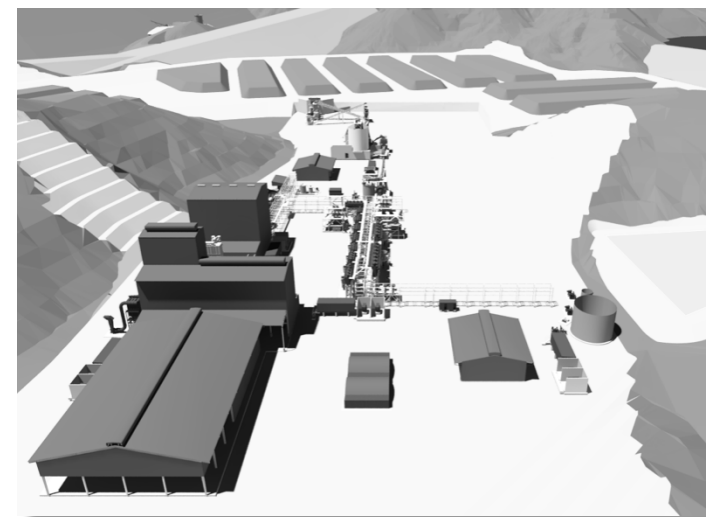


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Item	Metric
Post-tax, unlevered NPV <sub>10</sub>	US\$895m
Post-tax, unlevered IRR	42.80%
Capex for Phase One (83k tonnes pa)	US\$115m (incl 10% cont)
Capex for Phase Two (83k tonnes pa)	US\$69.5m (incl 15% cont)
Capex for Phase Three (83k tonnes pa)	US\$84.2m (incl 15% cont)
Life of Mine C1 Costs, FOB Dar	US\$401 /t
Life of Mine All in Sustaining Costs, FOB Dar*	US\$473 /t
Concentrate basket FOB Dar es Salaam**	USD \$1,301/t
Life of Mine	32 years
Average Steady State Production Rate	250k tonnes per annum
Total Life of Mine Concentrate Production	6.6m tonnes
Ore Reserves	70m tonnes @ 8.5% TGC
Reserve Life	23 years
Resources	212m tonnes @ 7.8% TGC

\* AISC includes all post start up capex including module 2&3 expansion

\*\*Basket is LOM average price for 97.5% LOI sized concentrate packed in 1 tonne bulka bags



3D Proposed Stage 1 Process Plant

Refer ASX Release of 24 October 2018

**CAPEX US\$115m | NPV<sub>10</sub> US\$895m | IRR 42.8% | MARGIN 63.6%**





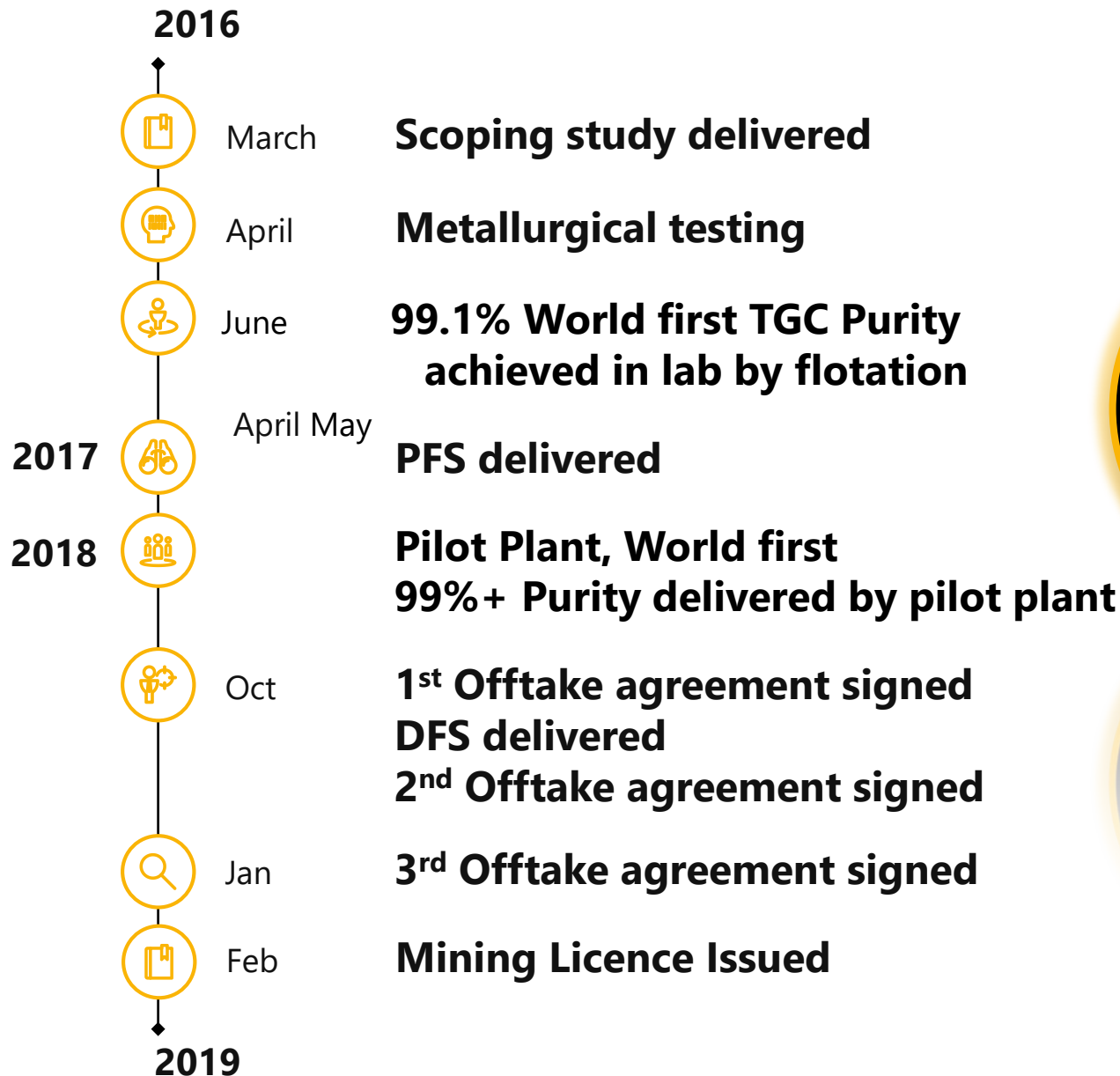
- Black Rock conducted a 90 tonne Pilot Plant producing 8 tonnes of concentrate into the hands of 24 customers who can work with the product and validate the quality
- The Pilot Plant defined the DFS and the success of the marketing strategy
- The Pilot Plant became a strategic pathway to securing customers through Offtakes and finance



# A team that can deliver



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**From  
Scoping  
study to  
DFS in 2  
years**

**From  
DFS to  
start of  
scoping  
flow**

# Tanzanian engagement



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**Tanzanian community and Government are supportive of Black Rock. We have properly secured our social licence to operate.**

- Environmental approval received
- Mining licence secured in three months!



# Why invest in Black Rock ?



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There are two world class graphite opportunities, they are, however, very different assets

**Name Plate**

**Market Capitalisation** *March 19*

**Mine Life**

**Initial Investment Capex**

**Product Profile**

**Reserves**

**Recovery**

**Logistics**



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250kt per annum

\$34M

32 years

US\$115M

98.5% to 99%  
98.5%;  
98.5% LOI premium;  
Ultra Purity flake of 99% LOI  
65% is above 100 mesh

70Mt tonnes @ 8.5% TGC

93%

Direct grid power  
60km from Rail at Ifakara  
300km to Port Dar es  
Salaam



**SYRAH**  
RESOURCES

350kt per annum

\$440M

50+ years

US\$215M

95% to 98%  
Fixed Carbon  
concentrate across a  
range of flake sizes  
30% above 100 mesh

114.5Mt @ 16.6% TGC

70% targeting 80%

Site diesel power  
Road Transport  
490km to Port Nacala

Note Syrah are currently in commercial production

# Strategic Approach to Financing



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<b>“Heavy” Definitive Feasibility Study</b>	<b>Remove Doubt - Validate Metallurgical Performance with Chinese EPC Partner</b>	<b>Chinese Pilot Plant (PP 2.0)- Demonstrate Product and Validate Price Point</b>	<b>Segmentation &amp; Channel Development</b>	<b>Educate Investors</b>	<b>Multiple Finance Streams &amp; Options –</b>
<p>DFS “Heavy” designed to engage with bank DD process – increased probability of attractive financing solution</p>	<p>Performance warranty for recovery, throughput and flake size underwrites “Build Operate Transfer” model</p> <p>“Made in China” - Increases attractiveness for Chinese offtake/ investment</p>	<p>Chinese EPC partner replicates product grades and performance – improved market transparency</p> <p>Supports product differentiation and supports price point to reflect Mahenge branding</p>	<p>Highest con grades and large flake size allows product to be placed in many segments</p> <p>Market product to highest margin segments</p>	<p>Orior Capital report describes sector and increases investment coverage of sector</p>	<p>Vendor bid of up to USD \$40m</p> <p>Finance from : China, Rest of Asia, North America, Australia, Middle East &amp; Africa</p> <p>Strategic partner now to increase attractiveness?</p> <p>Sell down of Mahenge Resources to fund construction?</p> <p>Debt – function of visibility of price point</p> <p>All equity approach not available</p>

# Upcoming Catalysts



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Mining Licence Award



DFS Optimisation / Chinese Procurement



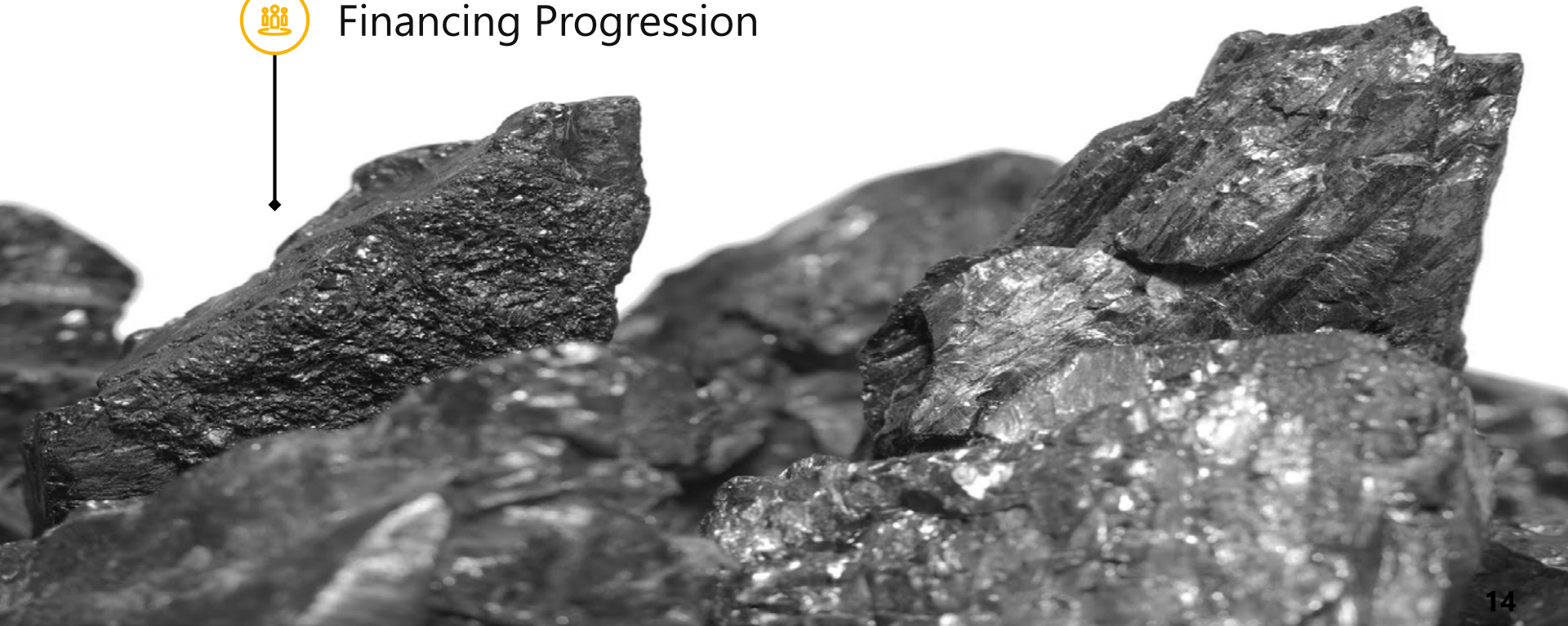
Additional Offtakes



4<sup>th</sup> Module



Financing Progression





## GROWING MARKET

- The graphite market is transforming from a mature sector to one with rapid growth prospects well above GDP
- There is an increasing demand for Mahenge's high spec graphite product
- China domestic rationalization supportive of pricing and volume



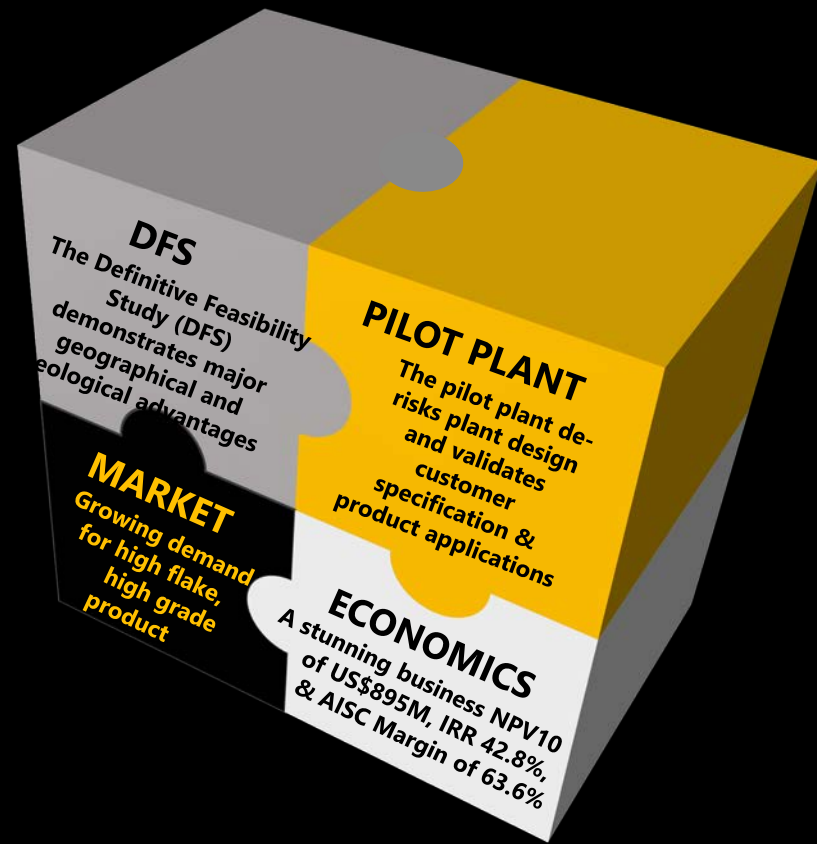
## BKT WELL POSITIONED

- Competent and experienced management team in place
- Project leverages Geological and Geographical advantages
- Product validation via largest pilot plant run in sector of 90 tonnes
- Great logistics with direct access to rail and grid power



## EXCEPTIONAL ECONOMICS

- Construction underwritten by binding off take agreements
- The only project with a bankable DFS in place to deliver:
  - NPV<sub>10</sub> US\$895M
  - IRR 42.8%
  - Margin 63.6%



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In October 2018, the Company released a Definitive Feasibility Study for the Project demonstrating exceptional financial metrics including:

-  Low Capex: Lowest peak capital expenditure of US\$115M for phase one;
-  High Margin: AISC margin of 63.6%;
-  Low Technical Risk: Substantial pilot plant run of 90 tonnes delivering eight tonnes of product; and
-  Superior Economics: IRR of 42.8% with NPV<sub>10</sub> of US\$895m

In January 2019 the Company announced it had substantially sold out of production with up to 205k tonnes of graphite subjected to binding offtakes in year three of production. In February 2019, it also announced receipt of its mining licence for the DFS project.

The Company is currently progressing financing discussions and detailed engineering with a view to commencing construction of the mine in 2019. The Company is not aware of any new information affecting the estimates above and all key assumptions remain valid